

10/516516

DTI Rec'd PCT/PTO 02 DEC 2004

ARTICLE 34 AMENDMENT

According to a second aspect of the present invention, there is provided a screw for use in an extruder for carrying a rubber material supplied from a hopper port at the rear of the cylinder of the extruder by the screw, molding it into a predetermined sectional form and extruding it from a nozzle attached to the end of the cylinder, wherein

the height of a flight portion located below the hopper port of the screw is lower than the height of a flight portion on a downstream side and continuously changes in a peripheral direction at a predetermined angle.

According to a tenth aspect of the present invention, there is provided a screw, wherein a portion where the height of the flight portion is lower than the height of the flight portion on a downstream side has an angle of 180° or less.

According to a third aspect of the present invention, there is provided a screw, wherein the number of threads on an upstream side of the screw is made smaller than the number of threads on a downstream side.

According to a fourth aspect of the present invention, there is provided a screw, wherein the interval of the threads on an upstream side is made wider than the interval of the threads on a downstream side.

According to a fifth aspect of the present

invention, there is provided a screw, wherein the diameters of the threads on an upstream side of the screw are made larger than the diameters of the threads on a downstream side.

According to a sixth aspect of the present invention, there is provided a screw, wherein the height of the flight located below the hopper port is made 2 to 6 % smaller than the diameter of the screw.

According to a eleventh aspect of the present invention, there is provided a process for producing a screw for use in an extruder for carrying a rubber material supplied from a hopper port at the rear of the cylinder of the extruder by the screw, molding it into a predetermined sectional form and extruding it from a nozzle attached to the end of the cylinder, the process comprising cutting away a peripheral portion of a flight portion located below the hopper port of an existing screw at a predetermined angle so that the height of the flight portion continuously changes in a peripheral direction to produce a screw having the flight portion located below the hopper port lower than the height of the flight portion on a downstream side.

According to a seventh aspect of the present invention, there is provided a process for producing a screw for extruders, wherein the amount of the peripheral portion cut away is 2 to 6 % of the diameter of the screw.

According to an eighth aspect of the present invention, there is provided a process for producing a tire rubber member by using the screw according to any one of the second to sixth and ten aspects.

According to a ninth aspect of the present invention, there is provided a tire rubber member manufactured by using the screw according to any one of the second to sixth and ten aspects and having a gauge fluctuation of 0.15 mm or less.

Brief Description of the Drawings

Fig. 1 is a diagram showing the constitution of an extruder according to an embodiment of the present invention;

Figs. 2(A) and 2(B) are partially enlarged views of a screw for use in the extruder according to the embodiment of the present invention;

Fig. 3 is a diagram showing the constitution of an extruder of the prior art;

Fig. 4 is a diagram showing the constitution of a screw for use in an extruder having a high delivery rate; and

Fig. 5 is a diagram for explaining the gauge fluctuation of an extruded product.

Detailed Description of the Preferred Embodiment

A preferred embodiment of the present invention